

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

THE TRUSTEES OF
PURDUE UNIVERSITY,

Plaintiff,

v.

STMICROELECTRONICS N.V.,
STMICROELECTRONICS
INTERNATIONAL N.V., and
STMICROELECTRONICS, INC.,

Defendants.

Civil Action No. 6:21-cv-00727-ADA

JURY TRIAL DEMAND

FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT

The Trustees of Purdue University files this its First Amended Complaint for Patent Infringement against Defendants STMicroelectronics N.V., STMicroelectronics International N.V., and STMicroelectronics, Inc. (collectively, “Defendants”) as follows:

PARTIES

1. Plaintiff The Trustees of Purdue University (“Purdue”) is a statutory body corporate created by and existing under Indiana law, charged by Indiana law with the responsibility for operating Purdue University, and the assignee and exclusive owner of all right, title, and interest in U.S. Patent Nos. 7,498,633 and 8,035,112 (the “Patents-in-Suit”). Purdue’s principal place of business is at 610 Purdue Mall, West Lafayette, Indiana 47907.

2. Founded in 1869, Purdue is a public land-grant research university under the 1862 Morrill Act that is consistently ranked among the top universities in the world. Purdue enrolls more than 40,000 students under the guidance of over 16,000 faculty and staff. In September of 2020, U.S. News & World Report ranked Purdue the fifth most innovative school in the United States.

Purdue's professional and graduate programs include the well-ranked College of Engineering, Krannert School of Management, College of Education, and College of Pharmacy. Purdue's esteemed School of Aeronautics and Astronautics within the College of Engineering is known as the "Cradle of Astronauts" for producing twenty-six astronauts, including Neil Armstrong and Gus Grissom. Other notable Purdue alumni are Nobel Prize winners Edward Mills Purcell, Ben Roy Mottelson, and Akira Suzuki. Purdue has also generated twenty-four National Academy of Engineering members.

3. Purdue is Indiana's primary driver for economic growth in science and technology. For example, Purdue spent over \$435 million on research during the 2019-2020 fiscal year, founded more than 80 technology startups, and raised more than \$96 million in venture capital funding. In 2019, according to the National Academy of Inventors and Intellectual Property Owners Association's annual report, Purdue ranked thirteenth globally for receiving U.S. utility patents. This distinction marks the sixth straight year that Purdue has ranked in the top twenty.

4. Purdue is an instrumentality of the State of Indiana, created and authorized by the Indiana General Assembly under Indiana Code §§ 21-23-2-1 *et seq.*, and thus enjoys sovereign immunity. *Kashani v. Purdue Univ.*, 813 F.2d 843, 845 (7th Cir. 1987); *Wasserman v. Purdue Univ.*, 431 F. Supp. 2d 911, 916 (N.D. Ind. 2006) ("[T]he Board of Trustees [of Purdue] is a political arm of the state which is immune to suit."); *Harris v. Trustees of Purdue Univ.*, No. 1:16-cv-00824-TWP-MPB, 2017 WL 529598, at *2 (S.D. Ind. Feb. 8, 2017).

5. Purdue's participation in this proceeding is not consent to the power of any court sitting outside of this District. Purdue does not waive any attribute of sovereignty owing to the State of Indiana and Purdue's status as an arm of the same. Purdue does not waive immunity to *inter partes* review, *ex parte* reexamination, or other post-grant proceedings at the United States

Patent and Trademark Office (“USPTO”). Purdue does not waive immunity to any noncompulsory counterclaims, or to any other federal or state proceedings whatsoever, whether or not initiated by Defendants.

6. Defendant STMicroelectronics N.V. (“STNV”) is a Dutch semiconductor company that owns and includes approximately sixty-one subsidiaries.¹ STNV together with its consolidated subsidiaries is “[o]ne of the world’s largest semiconductor companies,” with “2020 revenues of \$10.2 B.”²

7. STNV was formed and incorporated in 1987 as a result of the combination of the semiconductor business of SGS-Microelettronica, Inc. (then owned by Società Finanziaria Telefonica (S.T.E.T.), an Italian corporation) and the non-military business of Thomson Semiconducteurs (then owned by the former Thomson-CSF, now Thales, a French corporation). STNV operated as SGS-Thomson Microelectronics N.V. until May 1998, when it changed its name to STMicroelectronics N.V.

8. STNV completed its initial public offering in December 1994 with simultaneous listings on the Bourse de Paris (now known as Euronext Paris) and the New York Stock Exchange (NYSE: STM). In 1998, STNV also listed its shares on the Borsa Italiana S.p.A. (known as Borsa Italiana).

9. As expressed in STNV’s Form 20-F filed with the U.S. Securities and Exchange Commission on February 24, 2021, STNV is “organized under the laws of The Netherlands, with

¹ See STNV’s Form 20-F, Ex. 8.1 (Subsidiaries and Equity Investments of the Company), (filed Feb. 24, 2021), https://www.sec.gov/Archives/edgar/data/932787/000156459021008102/stm-ex81_9.htm (last visited Oct. 25, 2021).

² Company Presentation at 2 (Jul. 2021), https://www.st.com/content/ccc/resource/corporate/company/company_presentation/8d/fc/ba/0b/41/0d/47/12/company_presentation.pdf/files/company_presentation.pdf/jcr:content/translations/en.company_presentation.pdf.

[its] corporate legal seat in Amsterdam, The Netherlands, and [its] head offices at WTC Schiphol Airport, Schiphol Boulevard 265, 1118 BH Schiphol, The Netherlands.”³

10. STNV’s “headquarters and operational offices are managed through [its] wholly owned subsidiary, STMicroelectronics International N.V., and are located at 39 Chemin du Champ des Filles, 1228 Plan-Les-Ouates, Geneva, Switzerland.”⁴

11. While STNV is the “parent company,” it conducts its “global business through STMicroelectronics International N.V.” and also conducts its “operations through service activities from [wholly owned] subsidiaries.”⁵

12. STNV is “organized in a matrix structure with geographic regions interacting with product lines, both supported by shared technology and manufacturing operations and by central functions, designed to enable [the Dutch company] to be closer to [its] customers and to facilitate communication among the R&D, production, marketing and sales organizations.”⁶

13. STNV together with its consolidated subsidiaries “designs, develops, manufactures and markets a broad range of products, including discrete and general purpose components, application-specific integrated circuits (‘ASICs’), full-custom devices and semi-custom devices and application-specific standard products (‘ASSPs’) for analog, digital and mixed-signal applications.”⁷

³ STNV’s Form 20-F at 19, https://www.sec.gov/ix?doc=/Archives/edgar/data/932787/000156459021008102/stm-20f_20201231.htm.

⁴ *Id.*

⁵ *Id.* at 29; *see also id.* at 20 (stating STNV’s “operations are also conducted through [its] various subsidiaries, which are organized and operated according to the laws of their country of incorporation, and consolidated by STMicroelectronics N.V.”).

⁶ *Id.* at 29.

⁷ *Id.* at 20.

14. STNV together with its consolidated subsidiaries has “developed advanced systems-oriented technologies that enable [it] to produce differentiated and application-specific products, including ... silicon carbide (SiC) ... for high-efficiency systems.”⁸

15. “An independent device manufacturer,”⁹ STNV together with its consolidated subsidiaries has “[o]ver 80 Sales & marketing offices serving over 100,000 customers across the globe”¹⁰ to design and build semiconductors that address their needs. Semiconductors are electronic components that serve as the building blocks inside electronic systems and equipment. Semiconductors, generally known as “chips,” combine multiple transistors on a single piece of material to form a complete electronic circuit. The “Top 10 Customers” for 2020 were Apple, Bosch, Continental, HP, Huawei, Intel-Mobileye, Nintendo, Samsung, Seagate, and Tesla (collectively, “ST Customers”).¹¹

16. STNV together with its consolidated subsidiaries “is organized by a combination of country/area coverage and key accounts coverage” with an objective of “boosting demand creation through an enhanced focus on geographical coverage with strong technical expertise, supported in the mass market by [the company’s] distribution channel and local initiatives.”¹² STNV together with its consolidated subsidiaries “engage distributors ... to distribute and promote [the company’s] products”¹³ throughout the United States and in Texas. These “distributors have a dual role, in that they assist in fulfilling the demand of [the company’s] customers by servicing their orders, while also supporting the creation of product demand and business development. Most

⁸ *Id.*

⁹ STNV’s Form 20-F at 20.

¹⁰ Company Presentation at 2 (Jul. 2021),

https://www.st.com/content/ccc/resource/corporate/company/company_presentation/8d/fc/ba/0b/41/0d/47/12/company_presentation.pdf/files/company_presentation.pdf/jcr:content/translations/en.company_presentation.pdf.

¹¹ *Id.* at 33.

¹² STNV’s Form 20-F at 25.

¹³ *Id.* at 26.

of [the company's] sales to distributors are made under specific agreements allowing for price protection and stock rotation for unsold merchandise.”¹⁴

17. Additionally, STNV together with its consolidated subsidiaries “sell[s] and deliver[s] [the company's] products to electronics manufacturing services (‘EMS’) companies” that “incorporate [the company's] products into the application specific products they manufacture for [the company's] customers.”¹⁵ STNV together with its consolidated subsidiaries “also sell[s] products to original design manufacturers (‘ODM’)” that “manufacture products for [the company's] customers much like EMS companies do, but they also design applications for [the company's] customers, and in doing so themselves select the products and suppliers that they wish to purchase from.”¹⁶

18. STNV together with its consolidated subsidiaries has three “reportable segments,”¹⁷ including the “Automotive and Discrete Group”¹⁸ comprised of, among other things, discrete and power transistor products that serves its “strategic end markets (automotive, industrial, personal electronics and communications equipment, computers and peripherals).”¹⁹ The portfolio of discrete and power transistor products offered by STNV together with its consolidated subsidiaries includes SiC power MOSFETs (metal-oxide semiconductor field-effect transistors) “featuring the industry’s highest temperature rating of 200 °C.”²⁰

¹⁴ *Id.*

¹⁵ STNV’s Form 20-F at 26.

¹⁶ *Id.*

¹⁷ *Id.* at 21.

¹⁸ *Id.*

¹⁹ *Id.* at 22.

²⁰ *Id.*; see also STPOWER Sic MOSFET (Marketing Flyer) at 1, 2 (containing registered trademarks of STMicroelectronics, Inc. like this one, “© STMicroelectronics – January 2021”), https://www.st.com/content/ccc/resource/sales_and_marketing/promotional_material/flyer/group0/0c/a0/2a/ab/a7/d6/4e/ef/flsicmosfet0121_flyer/files/flsicmosfet0121.pdf/jcr:content/translations/en.flsicmosfet0121.pdf.

19. Through its own employees like Denise Tuinfort, “Senior Legal Counsel at STMicroelectronics N.V. ... in Amsterdam”²¹ and others located elsewhere, STNV “provide[s] certain administrative, human resources, legal, treasury, strategy, manufacturing, marketing and other overhead services to [its] consolidated subsidiaries pursuant to service agreements for which [STNV] recover[s] the cost.”²²

20. As a critical part of its strategy and revenues, STNV’s “main capital investment in front-end is in ... increase capacity for SiC Power MOSFET in [its] Catania and Singapore facilities.”²³ As President and Chief Executive Officer Jean-Marc Chery has represented during the company’s quarterly and annual results briefings, STNV intends to capture 30% of the SiC market, projected to be a \$3.7 billion market by 2025.

21. STNV (alone or through its wholly owned subsidiaries) makes SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, available through STMicroelectronics International N.V. and/or certain of STNV’s other wholly owned subsidiaries, which market(s) and sell(s) the products. To the right are photographs of the SCTW90N65G2V and SCTW70N120G2V, which according to each product’s datasheet is marked SCT90N65G2V and SCTW70N120G2V respectively.



²¹ ECF No. 22-1 (Tuinfort Decl. attached to STNV’s motion to dismiss for lack of personal jurisdiction) at 2.

²² STNV’s Form 20-F at 29.

²³ STNV’s Form 20-F at 65.

22. Each datasheet for the SCTW90N65G2V and SCTW70N120G2V contains an “IMPORTANT NOTICE” that states: “STMicroelectronics NV and its subsidiaries (‘ST’) reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice.”

23. STNV (alone or through STMicroelectronics International N.V. and/or certain of STNV’s other wholly owned subsidiaries) makes, uses, sells, offers for sale, and imports SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V. By design and on purpose, STNV and certain of its wholly owned subsidiaries, acting in consort, place SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, into the stream of commerce throughout the United States via an established distribution channel.

24. STNV (alone or through STMicroelectronics International N.V. and/or certain of STNV’s other wholly owned subsidiaries) supplies SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, used in ST Customers’ application specific products that are imported into the United States.

25. Defendant STMicroelectronics International N.V. (“ST-INTL”), a “wholly-owned subsidiary of [STNV],”²⁴ is “a company incorporated under the laws of the Netherlands, having its registered offices at WTC Schiphol Airport, Schiphol boulevard 265, 1118 BH Luchthaven Schiphol, Amsterdam, The Netherlands, acting through its Swiss branch at 39, Chemin du Champ-des-Filles, CH-1228 Geneva – Plan-Les-Ouates, Switzerland.”²⁵

26. Under STNV’s supervision, direction and control, ST-INTL (alone or through its subsidiaries and/or certain of STNV’s other wholly owned subsidiaries) makes, uses, sells, offers

²⁴ *Liberty Patents, LLC v. Broadcom Inc.*, No. 6:20-cv-00970-ADA, (W.D. Tex. Dec. 23, 2020), ECF No. 60 (STNV and ST-INTL’s Rule 7.1(a) Disclosure Statement) at 1.

²⁵ ST-INTL’s “Terms of Use” for Website, https://www.st.com/content/st_com/en/common/terms-of-use.html (last visited Oct. 25, 2021).

for sale, and imports SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V. By design and on purpose, ST-INTL and certain of STNV's wholly owned subsidiaries, acting in consort, place SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, into the stream of commerce throughout the United States via an established distribution channel.



LIFE.AUGMENTED

U.S. Serial Number: 85664111
U.S. Registration Number: 4442278
U.S. Registration Date: Dec 3, 2013
Mark: LIFE.AUGMENTED
Owner: STMicroelectronics International NV

28. Datasheets, flyers, and/or other marketing materials for SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, contain ST-INTL's registered trademarks.

29. By and through the over 80 sales & marketing offices in 35 countries, including the office located at 8501 N. Mo-Pac Expressway, Suite 420, Austin, Texas 78757, ST-INTL (alone or through its subsidiaries and/or certain of STNV's other wholly owned subsidiaries) markets SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, for use in high-power applications, including automotive and industrial applications.

30. ST-INTL (alone or through its subsidiaries and/or certain of STNV's other wholly owned subsidiaries) sells and offers for sale SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, through its website <https://www.st.com/en/sic-devices/sic-mosfets.html#>.

31. ST-INTL (alone or through its subsidiaries and/or certain of STNV's other wholly owned subsidiaries) sells and offers for sale SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, to customers in the United States.

32. ST-INTL (alone or through its subsidiaries and/or certain of STNV's other wholly owned subsidiaries) sells and offers for sale SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, to ST Customers in the United States.

33. ST-INTL (alone or through its subsidiaries and/or certain of STNV's other wholly owned subsidiaries) sells and offers for sale SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, to ST Customers outside the United States.

34. ST-INTL (alone or through its subsidiaries and/or certain of STNV's other wholly owned subsidiaries) sells and offers for sale SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, to customers in Texas.

35. ST-INTL (alone or through its subsidiaries and/or certain of STNV's other wholly owned subsidiaries) sells and offers for sale SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, to ST Customers in Texas.

36. Upon information and belief, ST-INTL (alone or through its subsidiaries and/or certain of STNV's other wholly owned subsidiaries) sells and offers for sale SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, to distributors in the United States, including Avnet (9233 Waterford Centre Blvd., Austin, TX 78758 and 12211 Technology Blvd.,

Austin, TX 78727), Future Electronics (8310-1 North Capitol of Texas Hwy, Austin, TX 78731), and Arrow (9233 Waterford Centre Blvd., Austin, TX 78758).

37. Upon information and belief, ST-INTL (alone or through its subsidiaries and/or certain of STNV's other wholly owned subsidiaries) offers for sale SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, to customers in the United States and negotiates such offers in the United States, but consummates the sale and delivery of the products elsewhere.

38. Upon information and belief, ST-INTL (alone or through its subsidiaries and/or certain of STNV's other wholly owned subsidiaries) sells and offers for sale SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, entirely abroad to intermediaries who then import the products into the United States.

39. Upon information and belief, ST-INTL (alone or through its subsidiaries and/or certain of STNV's other wholly owned subsidiaries) sells and offers for sale SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, entirely abroad to ST Customers with knowledge that the products will be imported into the United States.

40. Upon information and belief, ST-INTL (alone or through its subsidiaries and/or certain of STNV's other wholly owned subsidiaries) sells and offers for sale SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, entirely abroad to EMS companies with knowledge that the products will be imported into the United States.

41. Upon information and belief, ST-INTL (alone or through its subsidiaries and/or certain of STNV's other wholly owned subsidiaries) sells and offers for sale SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, entirely abroad to ODMs with knowledge that the products will be imported into the United States.

42. Defendant STMicroelectronics, Inc. (“ST-INC”), a wholly owned U.S.-based subsidiary of STNV, is a Delaware corporation with its principal place of business at 750 Canyon Drive, Suite 300, Coppel, Texas 75019.

43. ST-INC admits that it also has an office at 8501 N. Mo-Pac Expressway, Suite 420, Austin, Texas 78757.²⁶ As the July 2021 Company Presentation makes clear, this is a “Main Sales & Marketing” office, and it is one of fourteen such offices located throughout the United States.²⁷



44. ST-INC admits that it is and has been registered to do business in the State of Texas since August 4, 1983.²⁸

45. ST-INC admits that it has transacted business in this District.²⁹

46. ST-INC owns the following trademarks that are registered in the USPTO:

²⁶ See ECF No. 21 (ST-INC Answer), ¶ 14.

²⁷ July 2021 Company Presentation at 3.

²⁸ See ECF No. 21 (ST-INC Answer), ¶ 15.

²⁹ See ECF No. 21 (ST-INC Answer), ¶ 14.



U.S. Application Serial No. 85522548
U.S. Registration No. 4764845
U.S. Registration Date: June 30, 2015
Mark: ST (Stylized/Design)
Owner: STMicroelectronics, Inc.



U.S. Serial Number: 85130590
U.S. Registration Number: 3973433
U.S. Registration Date: Jun 7, 2011
Mark: ST (Stylized/Design)
Owner: STMicroelectronics, Inc.



U.S. Serial Number: 85008787
U.S. Registration Number: 3968997
U.S. Registration Date: May 31, 2011
Mark: ST (Stylized/Design)
Owner: STMicroelectronics, Inc.

STMicroelectronics

U.S. Application Serial No. 75982189
U.S. Registration No. 2605445
U.S. Registration Date: August 6, 2002
Mark: STMICROELECTRONICS
Owner: STMICROELECTRONICS, INC.



U.S. Serial Number: 75389355
U.S. Registration Number: 2356498
U.S. Registration Date: Jun 13, 2000
Mark: ST
Owner: STMICROELECTRONICS, INC.

47. Datasheets, flyers and/or other marketing materials for SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, contain ST-INC's registered trademarks.

48. Datasheets, flyers and/or other marketing materials for SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, contain each of ST-INTL's and ST-INC's registered trademarks.

49. By and through the office located at 8501 N. Mo-Pac Expressway, Suite 420, Austin, Texas 78757, ST-INC (alone or through its subsidiaries) markets SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, for use in high-power applications, including automotive and industrial applications.

50. ST-INC (alone or through its subsidiaries) sells and offers for sale SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, to customers in the United States.

51. ST-INC (alone or through its subsidiaries) sells and offers for sale SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, to ST Customers in the United States.

52. ST-INC (alone or through its subsidiaries) sells and offers for sale SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, to customers in Texas.

53. ST-INC (alone or through its subsidiaries) sells and offers for sale SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, to ST Customers in Texas.

54. ST-INC (alone or through its subsidiaries) sells and offers for sale SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, to distributors in the United States, including Avnet (9233 Waterford Centre Blvd., Austin, TX 78758 and 12211 Technology Blvd., Austin, TX 78727), Future Electronics (8310-1 North Capitol of Texas Hwy, Austin, TX 78731), and Arrow (9233 Waterford Centre Blvd., Austin, TX 78758).

55. Upon information and belief, ST-INC (alone or through its subsidiaries) offers for sale SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, to customers in the United States and negotiates such offers in the United States, but consummates the sale and delivery of the products elsewhere.

56. Upon information and belief, ST-INC (alone or through its subsidiaries) sells and offers for sale SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, entirely abroad to intermediaries who then import the products into the United States.

57. Upon information and belief, ST-INC (alone or through its subsidiaries) sells and offers for sale SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, entirely abroad to ST Customers with knowledge that the products will be imported into the United States.

58. Upon information and belief, ST-INC (alone or through its subsidiaries) sells and offers for sale SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, entirely abroad to EMS companies with knowledge that the products will be imported into the United States.

59. Upon information and belief, ST-INC (alone or through its subsidiaries) sells and offers for sale SiC power MOSFETs, including the SCTW90N65G2V and SCTW70N120G2V, entirely abroad to ODMs with knowledge that the products will be imported into the United States.

JURISDICTION

60. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a) because this action arises under the Patent Laws of the United States, 35 U.S.C. §§ 1 *et seq.*

61. This Court has personal jurisdiction over ST-INC because (a) it admits “that it is subject to personal jurisdiction in this Court for the purposes of Purdue’s Complaint”;³⁰ (b) it waived its right to challenge personal jurisdiction by failing to raise a lack of personal jurisdiction defense in its Answer; and because, directly or through intermediaries, (c) it has committed acts within the District giving rise to this action and/or has established minimum contacts with the District such that the exercise of jurisdiction comports with due process.

62. This Court has personal jurisdiction over each of STNV and ST-INTL, under Federal Rule of Civil Procedure 4(k)(2), because (i) Purdue sues STNV and ST-INTL for patent infringement pursuant to 35 U.S.C. § 271, (ii) each of STNV and ST-INTL is a foreign corporation not subject to jurisdiction in any state’s courts of general jurisdiction, and (iii) the exercise of personal jurisdiction over each of STNV and ST-INTL satisfies due process.

63. STNV, directly and/or through subsidiaries and agents (including distributors, retailers, and others) makes, imports, ships, distributes, offers for sale, sells, uses, and advertises (including offering products and services through its website, <https://www.st.com>, as well as retailers) its products and/or services in the United States, the State of Texas, and the Western District of Texas, including ST-INC, a company operating and transacting business in Texas.

64. ST-INTL, directly and/or through subsidiaries and agents (including distributors, retailers, and others) makes, imports, ships, distributes, offers for sale, sells, uses, and advertises (including offering products and services through its website, <https://www.st.com>, as well as retailers) its products and/or services in the United States, the State of Texas, and the Western District of Texas, including ST-INC, a company operating and transacting business in Texas.

³⁰ ECF No. 21 (ST-INC Answer), ¶ 9.

65. ST-INTL, acting alone and/or in concert with and/or at the direction and subject to the control of STNV, directly and/or through subsidiaries, makes, imports, ships, distributes, offers for sale, sells, uses, and advertises (including offering products and services through its website, <https://www.st.com>, as well as other retailers) its products and/or services in the United States, the State of Texas, and this District.

66. Each of STNV and ST-INTL, acting alone and/or in concert with and/or at the direction and subject to the control of the other, directly and/or through its subsidiaries and agents (including distributors, retailers, and others), has purposefully and voluntarily placed one or more of its infringing products, as described below, into the stream of commerce throughout the United States with the expectation that the products will be purchased and used by customers in this District. These infringing products have been and continue to be purchased and used by customers in this District. Each of STNV and ST-INTL has committed acts of patent infringement within the State of Texas and, more particularly, within this District.

67. This Court's exercise of personal jurisdiction over each of STNV and ST-INTL is thus consistent with the Texas long-arm statute, TEX. CIV. PRAC. & REM. CODE § 17.042, and traditional notions of fair play and substantial justice.

68. Each of STNV and ST-INTL is also subject to this Court's specific personal jurisdiction, because the present dispute arises from, and is related to, each of STNV's and ST-INTL's activities in Texas and in this District, as described above. These activities include STNV (through ST-INTL and/or its other wholly owned subsidiaries) soliciting business from, and transacting business with others in the State of Texas in this District, including sales of the company's SiC power MOSFET subcomponents in application specific products discussed above. STNV, directly and/or through subsidiaries and agents (including distributors, retailers, and

others), makes, imports, ships, distributes, offers for sale, sells, uses, and advertises (including offering products and services through its website, <https://www.st.com>, as well as other retailers) its products and/or services in the United States, the State of Texas, and this District.

VENUE

69. Venue is proper in this District under 28 U.S.C. § 1400(b), which states: “Any civil action for patent infringement may be brought in the judicial district where the defendant resides, or where the defendant has committed acts of infringement and has a regular and established place of business.” Venue is proper as to ST-INC because (a) it admits venue over it is proper in this District;³¹ (b) it resides in Texas given it is registered to do business in Texas; and (c) it has a regular and established place of business in this District at 8501 N. Mo-Pac Expressway, Suite 420, Austin, Texas 78757 and has committed acts of infringement here by, among other things, importing, offering to sell, and selling products that infringe the Patents-in-Suit.

70. Venue is also proper as to STNV, and ST-INTL, which are organized under the laws of The Netherlands, under 28 U.S.C. § 1391(c)(3), which provides that “a defendant not resident in the United States may be sued in any judicial district, and the joinder of such a defendant shall be disregarded in determining where the action may be brought with respect to other defendants.”

71. Purdue does not waive its sovereign immunity as to any venue, including district courts and administrative tribunals, other than this Court, namely the United States District Court for the Western District of Texas, Waco Division.

³¹ See ECF No. 21 (ST-INC Answer), ¶ 14.

THE '633 PATENT

72. On March 3, 2009, U.S. Patent No. 7,498,633 (“633 Patent”), entitled “High-Voltage Power Semiconductor Device,” was duly and legally issued by the USPTO. A copy of the '633 Patent is attached as Exhibit A to Plaintiff's Complaint for Patent Infringement and Jury Demand (ECF No. 1) and is incorporated herein by reference.

73. The '633 Patent issued from U.S. Patent Application No. 11/338,007, which was filed on January 23, 2006, and claims priority to U.S. Provisional Application No. 60/646,152, which was filed on January 21, 2005.

74. The '633 Patent relates generally to semiconductor devices, and more particularly to useful, novel, and non-obvious semiconductor devices for high-voltage power applications.

75. The inventors of the '633 Patent are James A. Cooper, Ph.D. and Asmita Saha, Ph.D.

76. Dr. Cooper is a Jai N. Gupta Professor Emeritus of Electrical and Computer Engineering at Purdue and received his Ph.D. from Purdue in 1973. From 1973 to 1983, Dr. Cooper was a member of Technical Staff with Bell Laboratories, Murray Hill, NJ, where he was a Principal Designer of AT&T's first CMOS microprocessor and developed a time-of-flight technique for investigating high-field transport in silicon inversion layers. He joined the Purdue faculty in 1983, where he was the Founding Director of the Purdue Optoelectronics Research Center. Since 1990, Dr. Cooper has explored device technology in the wide bandgap semiconductor SiC. His group demonstrated the first monolithic integrated circuits in SiC (1993), the first planar DMOS power transistors (1996), the first lateral DMOSFETs (1997), the first self-aligned short-channel DMOSFETs (2003), and a variety of other devices.

77. Dr. Saha was Dr. Cooper's student and, under his guidance, earned her doctorate from Purdue's School of Electrical and Computer Engineering, Birck Nanotechnology Center. Her

thesis focused on optimized design and simulation and fabrication of 4H-SiC short-channel DMOSFETs.

78. Purdue is the owner of all rights, title, and interest in and to the '633 Patent with full right to enforce the '633 Patent, including the right to recover for past infringement damages and the right to recover future royalties, damages, and income. On May 2, 2006, as recorded with the USPTO on May 18, 2006, Drs. Cooper and Saha assigned their rights and interests in the '633 Patent to Purdue Research Foundation. Thereafter, Purdue Research Foundation assigned its rights and interest in the '633 Patent to Purdue on June 18, 2021, as recorded with the USPTO on June 21, 2021.

79. Every claim of the '633 Patent is valid and enforceable and enjoys a statutory presumption of validity pursuant to 35 U.S.C. § 282.

80. All requirements under 35 U.S.C. § 287 have been satisfied with respect to the '633 Patent.

81. Defendants have never, either expressly or impliedly, been licensed under the '633 Patent.

THE '112 PATENT

82. On October 11, 2011, U.S. Patent No. 8,035,112 (the "'112 Patent"), entitled "SiC Power DMOSFET with Self-aligned Source Contact," was duly and legally issued by the USPTO. A copy of the '112 Patent is attached as Exhibit B to Plaintiff's Complaint for Patent Infringement and Jury Demand (ECF No. 1) and is incorporated herein by reference.

83. The '112 Patent issued from U.S. Patent Application No. 12/429,176, which was filed on April 23, 2009, and claims priority to U.S. Provisional Application No. 61/047,274, which was filed on April 23, 2008.

84. The '112 Patent relates generally to semiconductor field effect transistors, and more particularly to useful, novel, and non-obvious field effect transistors having self-aligned source contacts.

85. The inventors of the '112 Patent are Drs. Cooper and Saha.

86. Purdue is the owner of all rights, title, and interest in and to the '112 Patent with full right to enforce the '112 Patent, including the right to recover for past infringement damages and the right to recover future royalties, damages, and income. On July 6, 2009, as recorded with the USPTO on August 7, 2009, Drs. Cooper and Saha assigned their rights and interests in the '112 Patent to Purdue Research Foundation. Thereafter, Purdue Research Foundation assigned its rights and interest in the '112 Patent to Purdue on June 18, 2021, as recorded with the USPTO on June 18, 2021.

87. Every claim of the '112 Patent is valid and enforceable and enjoys a statutory presumption of validity pursuant to 35 U.S.C. § 282.

88. All requirements under 35 U.S.C. § 287 have been satisfied with respect to the '112 Patent.

89. Defendants have never, either expressly or impliedly, been licensed under the '112 Patent.

INFRINGEMENT OF THE '633 PATENT

90. Defendants have been and continue to directly and/or indirectly (by inducement and/or contributory infringement) and willfully infringe claim 9 of the '633 Patent in violation of 35 U.S.C. § 271.

91. Defendants have and continue to directly infringe the '633 Patent, literally and/or under the doctrine of equivalents, by making, using, offering for sale, selling, and/or importing in or into the United States, without authority, products that fall within the scope of claim 9 of the

'633 Patent in violation of 35 U.S.C. § 271(a), including but not limited to the following SiC power MOSFETs: SCT1000N170AG, SCT20N170AG, SCTWA35N65G2VAG, SCTH100N65G2-7AG, SCTH35N65G2V-7, SCTH35N65G2V-7AG, SCTH90N65G2V-7, SCTW100N65G2AG, SCTW35N65G2V, SCTW35N65G2VAG, SCTW90N65G2V, SCTWA35N65G2V, and SCTWA90N65G2V (collectively, the "Accused Products").

92. For example, each of the Accused Products (such as SCTW90N65G2V) is a double-implanted MOSFET.

SCTW90N65G2V
Datasheet

Silicon carbide Power MOSFET 650 V, 119 A, 18 mΩ (typ., T_J = 25 °C) in an HiP247 package

Features

Order code	V _{DS}	R _{DS(on)} max.	I _D
SCTW90N65G2V	650 V	24 mΩ	119 A

- Very high operating junction temperature capability (T_J = 200 °C)
- Very fast and robust intrinsic body diode
- Extremely low gate charge and input capacitances

Applications

- Switching applications
- Power supply for renewable energy systems
- High frequency DC-DC converters

Description

This silicon carbide Power MOSFET device has been developed using ST's advanced and innovative 2nd generation SiC MOSFET technology. The device features remarkably low on-resistance per unit area and very good switching performance. The variation of switching loss is almost independent of junction temperature.

Product status link
SCTW90N65G2V

Product summary

Order code	SCTW90N65G2V
Marking	SCT90N65G2V
Package	HiP247
Packing	Tube

SD11532 - Rev 8 - July 2019
For further information contact your local STMicroelectronics sales office.

93. Each of the Accused Products includes a silicon carbide substrate, a drift semiconductor layer formed on the front side of the substrate, a first source region, a first source electrode formed over the first source region defining a longitudinal axis, and a plurality of first

base contact regions defined in the first source region, each of which is spaced apart from the others in a direction parallel to the longitudinal axis defined by the first source electrode.

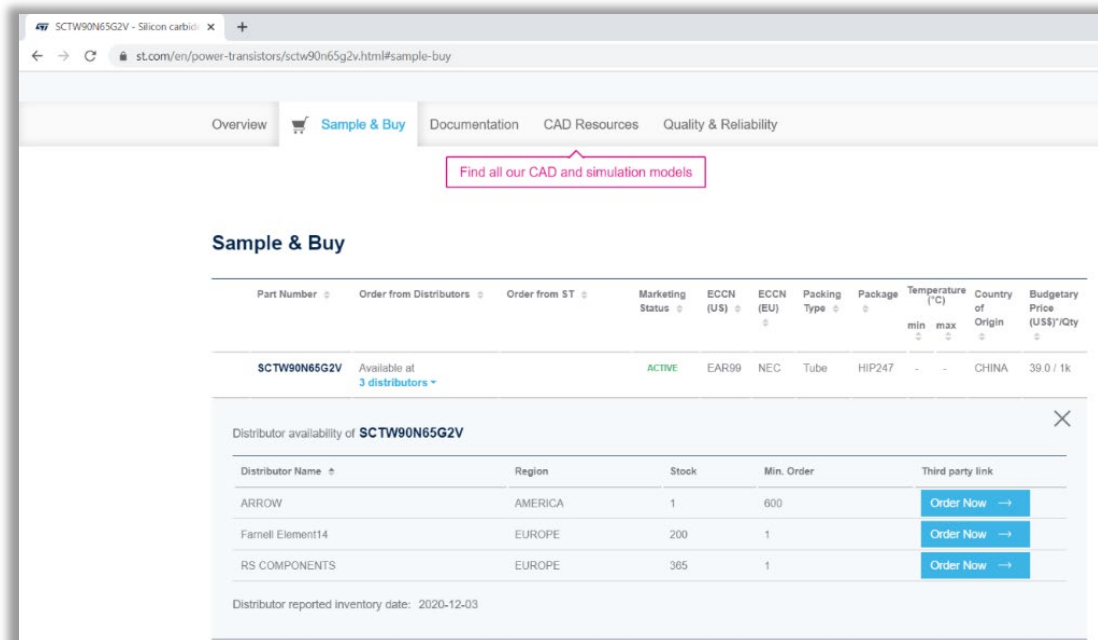
94. Each of the Accused Products also includes a second source region, a second source electrode formed over the second source region defining a longitudinal axis, and a plurality of second base contact regions defined in the second source region, each of which is spaced apart from the others in a direction parallel to the longitudinal axis defined by the second source electrode.

95. Each of the Accused Products also includes a JFET region, with a width less than about three micrometers, defined between the first source region and the second source region.

96. Purdue adopts, and incorporates by reference, as if fully stated herein, the exemplary claim chart attached as Exhibit C, which describes and demonstrates how Defendants infringe claim 9 of the '633 Patent.

97. Defendants have and continue to indirectly infringe the '633 Patent by inducing others to infringe one or more claims of the '633 Patent through making, using, selling, offering for sale, distributing, and/or importing the Accused Products. For example, Defendants induce their distributors like Arrow to directly infringe the '633 Patent by selling, offering for sale, or importing in or into the United States the Accused Products, including the State of Texas and this District.³²

³² <https://www.st.com/en/power-transistors/sctw90n65g2v.html#sample-buy>;
https://www.arrow.com/en/support/contact-support/find-an-arrow-office?country=US_Offices;
https://www.st.com/content/st_com/en/contact-us.html (listing even distributor locations); and
<https://www.arrow.com/en/products/sctw90n65g2v/stmicroelectronics> (last visited Oct. 25, 2021).



98. Defendants were and have been aware of the '633 Patent and its coverage of SiC power MOSFETs, including at least the Accused Products, since at least April 2021, when Purdue sent Defendants a notice letter, and no later than service of Plaintiff's Complaint for Patent Infringement and Jury Demand (ECF No. 1), and was aware that each of their actions as to importers, distributors, resellers, wholesalers, retailers, and/or end-users of the Accused Products would induce infringement. For example, Defendants knowingly and intentionally instruct their customers, distributors, end-users, and/or other third parties to infringe at least through user manuals, product documentation, services, and other materials, such as those located on the company website at https://www.st.com/content/st_com/en/products/sic-devices/sic-mosfets.html and other websites such as at <https://www.youtube.com/watch?v=hV5mqmuozlA>. By providing instruction and training to customers and end-users on how to use the Accused Products, in order to promote the sales of these products, in a manner that directly infringes one or more claims of the '633 Patent, including at least claim 9, Defendants specifically intended to induce infringement of the '633 Patent.

99. Despite such awareness of the '633 Patent and its coverage of SiC power MOSFETs, including at least the Accused Products, Defendants continue to take active steps (*e.g.*, creating and disseminating the Accused Products and other SiC power MOSFETs with similar infringing technology, as well as product manuals, instructions, promotional and marketing materials, and/or technical materials to distributors, resellers, wholesalers, retailers, and end-users) by encouraging others to infringe the '633 Patent with the specific intent to induce such infringement. Accordingly, Defendants have known and intended that their products infringe the '633 Patent and that Defendants' continued actions would actively induce the infringement of the '633 Patent claims.

100. Defendants have continued making, using, offering for sale, selling, and importing the Accused Products despite an objectively high likelihood that their actions infringe claim 9 of the '633 Patent—a valid and enforceable patent, and such objective risk of infringement was known to Defendants or so obvious that Defendants should have known it. Therefore, Purdue is entitled to receive enhanced damages up to three times the amount of actual damages for Defendants' willful infringement pursuant to 35 U.S.C. § 284.


101. Defendants' direct, indirect, and willful infringement of the '633 Patent has caused, and will continue to cause, substantial damage to Purdue. Purdue is, therefore, entitled to an award of damages adequate to compensate for Defendants' infringement of the '633 Patent, but in no event less than a reasonable royalty for Defendants' use and/or sale of Purdue's invention, together with pre- and post-judgment interest, attorneys' fees, and costs as fixed by the Court under 35 U.S.C. §§ 284 and 285.

INFRINGEMENT OF THE '112 PATENT

102. Defendants have been and continue to directly and/or indirectly (by inducement and/or contributory infringement) infringe claims 1, 6, 7, 10, 11, and 12 of the '112 Patent in violation of 35 U.S.C. § 271.

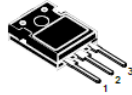
103. Defendants have and continue to directly infringe the '112 Patent, literally and/or under the doctrine of equivalents, by making, using, offering for sale, selling, and/or importing in or into the United States, without authority, the Accused Products, which fall within the scope of claims 1, 6, 7, 10, 11, and 12 of the '112 Patent in violation of 35 U.S.C. § 271(a).

104. For example, each of the Accused Products (such as SCTW90N65G2V) is a MOSFET.

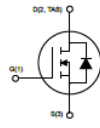


SCTW90N65G2V
 Datasheet


Silicon carbide Power MOSFET 650 V, 119 A, 18 mΩ (typ., T_J = 25 °C)
in an HiP247 package



HiP247



Q(1)



Features

Order code	V _{DS}	R _{DS(on)} max.	I _D
SCTW90N65G2V	650 V	24 mΩ	119 A

- Very high operating junction temperature capability (T_J = 200 °C)
- Very fast and robust intrinsic body diode
- Extremely low gate charge and input capacitances

Applications

- Switching applications
- Power supply for renewable energy systems
- High frequency DC-DC converters

Description

This silicon carbide Power MOSFET device has been developed using ST's advanced and innovative 2nd generation SiC MOSFET technology. The device features remarkably low on-resistance per unit area and very good switching performance. The variation of switching loss is almost independent of junction temperature.

Product status link

[SCTW90N65G2V](#)

Product summary

Order code	SCTW90N65G2V
Marking	SCT90N65G2V
Package	HiP247
Packing	Tube

DS11632 - Rev 8 - July 2019
For further information contact your local STMicroelectronics sales office.

www.st.com

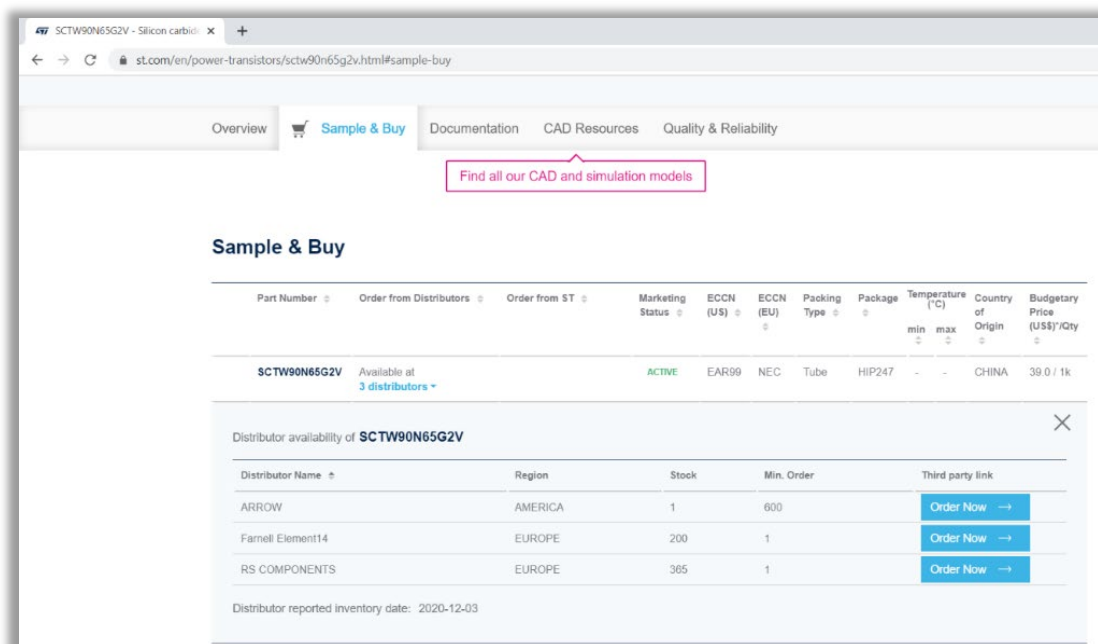
105. Each of the Accused Products includes a silicon carbide wafer having a substrate body with an upper surface, at least one source region formed adjacent to the upper surface, a substrate surface oxidation layer on the upper surface of the substrate body and adjacent source region, and at least two polysilicon gates above the substrate surface oxidation layer (each with a top, a bottom and sides), wherein a first source region of the at least one source region is juxtaposed between first and second adjacent gates of the at least two polysilicon gates.

106. Each of the Accused Products also includes a gate oxide layer (thicker than the substrate surface oxidation layer) over the tops and sides of each of the polysilicon gates and a material layer, including one of an oxide and a metal contact, over the first source region and between the gate oxide layers on the sides of the polysilicon gates.

107. Purdue adopts, and incorporates by reference, as if fully stated herein, the exemplary claim chart attached as Exhibit C, which describes and demonstrates how Defendants infringe claims 1, 6, 7, 10, 11, and 12 of the '112 Patent.

108. Defendants have and continue to indirectly infringe the '112 Patent by inducing others to infringe one or more claims of the '112 Patent through making, using, selling, offering for sale, distributing, and/or importing the Accused Products. For example, Defendants induce their distributors like Arrow to directly infringe the '112 Patent by selling, offering for sale, or importing in or into the United States the Accused Products, including the State of Texas and this District.³³

³³ <https://www.st.com/en/power-transistors/sctw90n65g2v.html#sample-buy>;
https://www.arrow.com/en/support/contact-support/find-an-arrow-office?country=US_Offices;
https://www.st.com/content/st_com/en/contact-us.html (listing even distributor locations); and
<https://www.arrow.com/en/products/sctw90n65g2v/stmicroelectronics> (last visited Oct. 25, 2021).



109. Defendants' direct and indirect infringement of the '112 Patent has caused, and will continue to cause, substantial damage to Purdue. Purdue is, therefore, entitled to an award of damages adequate to compensate for Defendants' infringement of the '112 Patent, but in no event less than a reasonable royalty for Defendants' use and/or sale of Purdue's invention, together with pre- and post-judgment interest, attorneys' fees, and costs as fixed by the Court under 35 U.S.C. §§ 284 and 285.

JURY DEMAND

Pursuant to Federal Rule of Civil Procedure 38(b), Purdue hereby demands a trial by jury on all issues triable to a jury.

PRAYER FOR RELIEF

WHEREFORE, PREMISES CONSIDERED, Purdue requests that this Court enter judgment in its favor and against Defendants STMicroelectronics N.V., STMicroelectronics International N.V., and STMicroelectronics, Inc. as follows:

- A. Adjudging, finding, and declaring that Defendants have infringed the above-identified claims of each of the Patents-in-Suit under 35 U.S.C. § 271;
- B. Awarding the past and future damages arising out of Defendants' infringement of the Patents-in-Suit to Purdue in an amount no less than a reasonable royalty, together with prejudgment and post-judgment interest, in an amount according to proof;
- C. Adjudging, finding, and declaring that Defendants' infringement is willful and awarding enhanced damages and fees as a result of that willfulness under 35 U.S.C. § 284;
- D. Adjudging, finding, and declaring that the Patents-in-Suit are valid and enforceable;
- E. Awarding attorney's fees, costs, or other damages pursuant to 35 U.S.C. §§ 284 or 285 or as otherwise permitted by law; and
- F. Granting Purdue such other further relief as is just and proper, or as the Court deems appropriate.

Dated: October 25, 2021

Respectfully submitted,

/s/ Samuel E. Joyner

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COUNSEL FOR PLAINTIFF

THE TRUSTEES OF PURDUE UNIVERSITY

CERTIFICATE OF SERVICE

In accordance with Federal Rule of Civil Procedure 5 and Local Rule CV-5, I hereby certify that all counsel of record who are deemed to have consented to electronic service are being served with a copy of this document through the Court's CM/ECF system on October 25, 2021.

/s/ Samuel E. Joyner

Samuel E. Joyner